

What is claimed is,

1. An incubator for observation by microscope comprising:

an upwardly water tank unit including a container-accommodating portion in which a specimen container such as a dish is to be placed removably at the central portion thereof and a water reservoir disposed around the container-accommodating portion;

a lid for covering the upper end of the unit;

a heater for heating the specimen container and the unit; and

a means for supplying gas into an incubation space defined by the unit and the lid;

each of the unit and the lid having at the central portion thereof a light ray transmitting portion for transmitting light ray upwardly or downwardly therethrough.

2. The incubator according to claim 1, further comprising a means for supplying water into the reservoir from the outside of the unit.

3. The incubator according to claim 1 or 2, wherein the heater is of a plate type heating the container from the bottom thereof, and the heater is also provided with a light ray transmitting portion at the position corresponding to those provided on the unit and the lid.

4. The incubator according to claim 3, wherein the heater has a laminate comprising upper and lower plates and a heating element interposed therebetween, a top plate disposed above the upper plate with a space from the upper plate, and a frame for supporting the laminate and the top plate.

5. The incubator according to any of the preceding claims, further comprising a nutrient medium supplying means for supplying nutrient medium into the container within the unit from outside thereof.

6. The incubator according to claim 5, wherein the nutrient medium

supplying means has a structure for enabling the replenishment of nutrient medium within the container without removing the lid of the unit.

7. The incubator according to any of the preceding claims, the container-accommodating portion further comprising a pair of container holders disposed across the central portion of the unit and adjustable the spacing between the holders as desired.

8. The incubator according to any of the preceding claims, wherein the unit is adapted to be placed on the upper surface of the stage of the microscope so as not to contact with the plate type heater with a spacing defined therebetween, and the unit and the heater are separable.

9. The incubator according to claim 8, further comprising fixtures for securing the unit on the upper surface to the stage of the microscope.

10. The incubator according to any of the preceding claims, further comprising a means for varying the position of the specimen container by displacing the container horizontally on the accommodating portion from outside of the unit.

11. The incubator according to any of the preceding claims, wherein an entrance opening is provided through the side wall of the unit for putting the container into and out of the accommodating portion, and a side closure member for closing and opening the entrance is also provided.

12. The incubator according to claim 11, wherein the heater is adapted to be fit into a tool fitting hole so as to flush an upper surface of the heater on, which the container will be placed, with the upper surface of a portion of the stage of the microscope.

13. The incubator according to any of the preceding claims, wherein the lid covering the upper end of the unit has one or more slots formed through which any operation will be carried out to the specimen, the position of each slot is offset from the region of the accommodating portion on which

the specimen container is to be placed, the lid is adjusted to shift, while closing still the opening on the upper end of the unit, to displace the slots directly above the region of the accommodating portion on which the specimen container is to be placed.

14. The incubator according to any of the preceding claims, wherein the lid covering the upper end of the unit has an aperture formed in the region of the accommodating portion on which the specimen container is to be placed, the aperture is covered with a cover plate being rest on the lid, the cover plate can be displaced relative to the upper surface of the lid within the predetermined range while closing the aperture, the cover has a hole formed therein for inserting the objective lens.

15. The incubator according to any of the preceding claims, wherein on the bottom surface of the water tank is provided a water tank heater.

16. The incubator according to any of claims 3 to 15, wherein the heater for heating the specimen container and the water tank unit has a container-placing portion at which a heating portion is formed of a transparent conductive film.

17. The incubator according to any of the preceding claims, wherein that the light ray transmitting portion of the lid closing the upper end of the unit has a heating portion formed of a transparent conductive film.

18. The incubator according to any of the preceding claims, further comprising a means for securing the specimen container to urge the container against the objective lens, when interposing any oil or water between the objective lens of the microscope and the specimen container.